City of Bellevue

Calculating Building Height

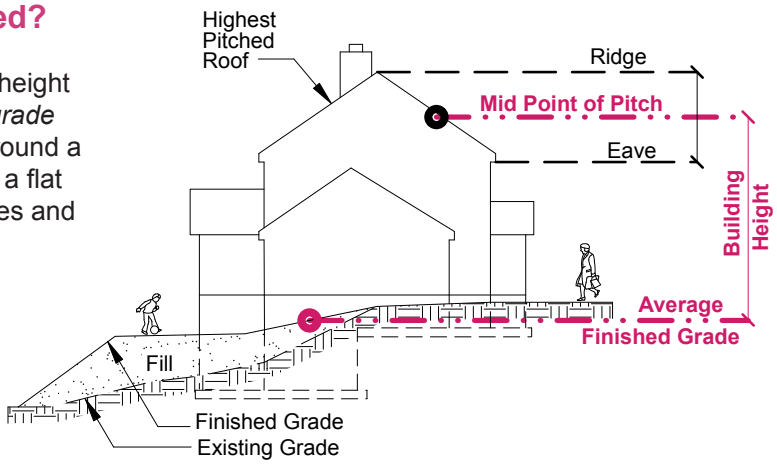
July 2006

Development Services
Handout **L-9**

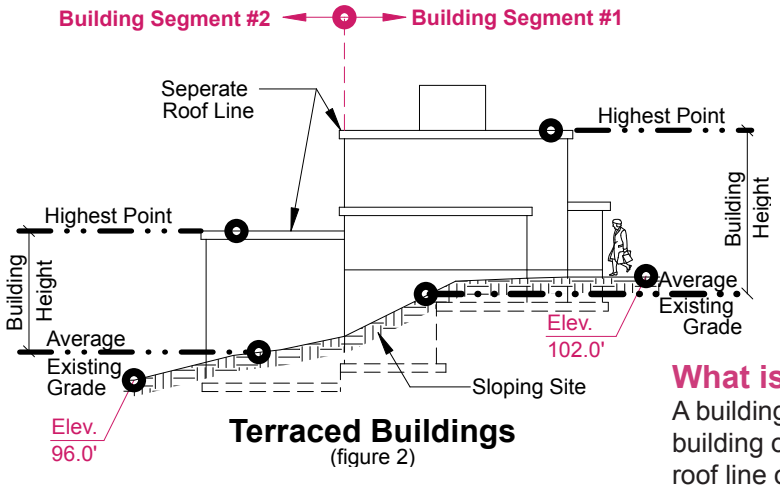
Note: This handout applies to all structures except those located in the Transition Area Design District. If your structure is located in the Transition Area Design District, see Handout L-10. For structures located in the Shoreline Overlay District, see also Handout L-11.

How is building height measured?

For structures that are not located in the Transition Area Design District, building height is measured from the *average finished grade* around the building, or in some cases around a building segment, to the highest point of a flat roof or to the mid point between the eaves and ridge of a pitched roof (figure 1).



Measuring Building Height
(figure 1)



Terraced Buildings
(figure 2)

What is a "building segment"?

A building segment is that portion of a terraced building on a sloping site which has a separate roof line or finished floor elevation with a grade change of at least four feet (figure 2).

How do I determine average finished grade?

Step 1: Provide an accurate drawing of the building footprint on the site. The drawing must show both the existing and proposed topography (using contour lines at 2' intervals).

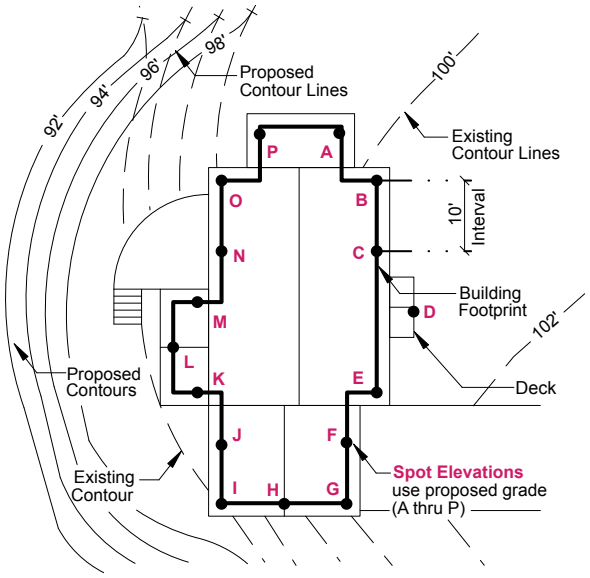
Step 2: Show points on the drawing every 10' around the building footprint. For each point, provide spot elevations of the topography as it will exist upon project completion.

Step 3: Add up all of the spot elevations, and divide by the quantity of those spot elevations. This gives you your average finished grade (figure 3).

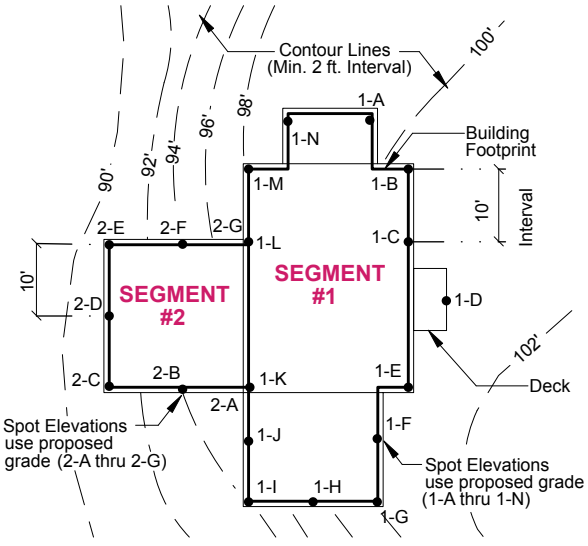
Calculating the Average Finished Grade
(add all spot elevations)

$$\frac{\text{A thru P}}{16} = \text{Average Finished Grade}$$

(divide by # of spot elevs.)



Determining Average Finished Grade
(figure 3)



Determining Average Finished Grade
(Separate Building Segments)
(figure 4)

What if I have a sloping site and a building composed of building segments?

To determine average finished grade for each segment, refer to the scaled drawing of the building footprint on the site, which you have prepared, showing the spot elevations for finished grade at 10’ intervals around the building. Do not provide spot elevations on the common wall between the segments. Locate and show on the plan the line or lines that distinguish each building segment. Number the segments. Starting with segment #1, add up all the spot elevations for that segment and divide by the quantity of the spot elevations for that segment. This gives you the average finished grade for segment #1 (figure 4). Repeat the process for each numbered segment.

Calculating the Average Finished Grade
(add all spot elevations)

$$\frac{\text{1-A thru 1-N}}{14} = \text{Average Finished Grade}$$

(divide by # of spot elevs.)

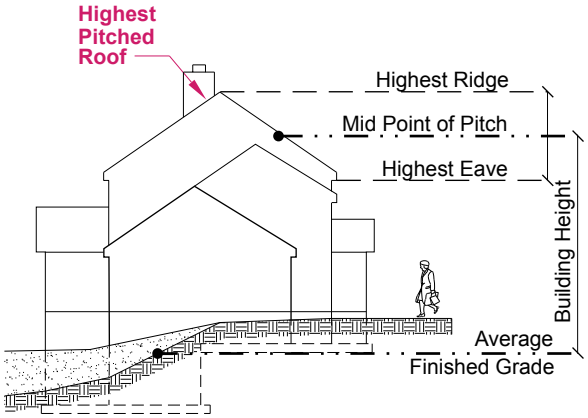
Repeat for each building segment

How do I determine if my proposed structure complies with the permitted height limit?

Subtract the average finished grade from the highest point of a flat roof (figure 2), or from the mid point between the ridge and eaves of a pitched roof (figure 1). If the result does not exceed the allowable height limit, the structure complies.

What if my building has several pitched roof sections with different ridge and eave elevations?

You would measure to the mid point between the highest ridge and the highest eave (figure 5).



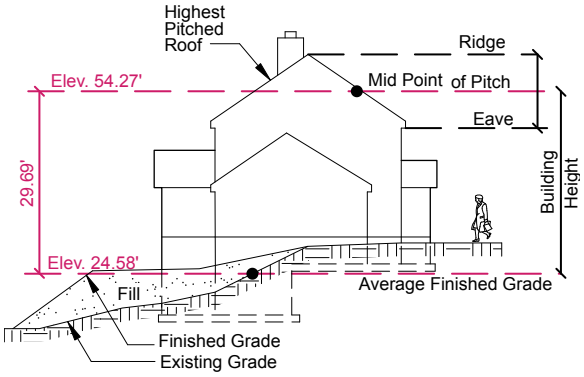
Multiple Pitched Roofs
(figure 5)

How do I determine if a building on a sloping site that is composed of building segments complies with the permitted building height?

For building segment #1 determine the elevation of the highest point of the roof, if it is a flat roof, or the mean height between the ridge and eave, if it is a pitched roof. Subtract the average finished grade for segment #1 from the roof elevation for segment #1. Then repeat this process for each numbered segment.

How do I illustrate proposed building height?

Provide a building elevation drawing that portrays the average finished grade elevation and the elevation of a flat roof, excluding parapet, or the elevation of the mid-point of a pitched roof (between the eaves and the ridge of the highest pitch). Show the ridge, mid-point, and eave. See figure 6.

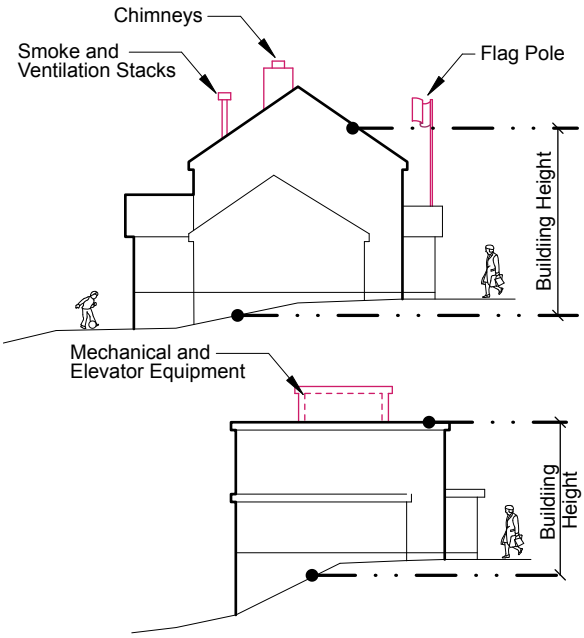


Building Height
(figure 6)

Are any building features excluded from building height calculations?

Some structural elements not intended for human habitation and not exceeding 15 feet above the maximum building height are excluded (figure 7). Examples:

- Mechanical and elevator equipment (and their penthouses or parapet walls designed solely to screen them)
- Chimneys
- Wireless communication facility antenna arrays when not located in a residential land use district
- Smoke and ventilation stacks
- Flag poles



Excluded Building Features
(figure 7)

Where can I get additional information?

- Handout L-10, Transition Area Overlay District
- Handout L-11, Shoreline Overlay District
- Land Use Code 20.50.012, Definition of *Building Height* and *Building Segment*
- Land Use Code 20.50.022, Definition of *Grade* and *Grade, Finished*
- Land Use Code, Dimensional Requirements Chart